NEW *COLEOPTERA* FROM NEW ZEALAND.

BY D. SHARP, M.B.

Among some *Coleoptera* that I have recently received from New Zealand, there are a few interesting species which I think may be named and characterized with advantage: as they are either species closely allied to known ones so as to be readily identified, or else forms so entirely new that they cannot be mistaken for anything else.

They are:—*Demetrida mœsta* (*Carabidæ*); *Brachypeplus brevicornis*, *Epuræa zealandica*, and *Soronia optata* (*Nitidulidæ*); *Brounia thoracica*, an isolated form, that cannot, I consider, be placed with advantage in any of the families of *Coleoptera*; *Pericoptus stupidus* (*Dynastidæ*); *Cilibe Huttoni* and *Chœrodes concolor* (*Tenebrionidæ*); *Rhipistena lugubris* (*Evaniocerides*, but connecting them with *Mordellistena*); *Somatidia longipes* (*Cerambycidæ*), and *Cryptodacne synthetica* (*Erotylidæ*); *Brounia*, *Rhipistena* and *Cryptodacne* are new generic names.

We are indebted to Professor Hutton, of Dunedin, and Captain Thos. Broun, of Whangarei, for the discovery of most of these insects.

Demetrida mœsta, *n. sp.*

Depressiuscula, sat nitida, nigra, pedibus fere concoloribus, antennis rufescentibus, articulis 1° et 3° infuscatis; prothorace sat lato, obsoletius transversim strigoso; elytris subtiliter (fere obsolete) striatis, apice oblique, vix sinuatim, truncatis. *Long.* $6\frac{1}{2}$ *mm., lat.* $2\frac{7}{8}$ *mm.*

This seems very distinct from the other described species; it is rather broad, and in its form resembles *D. picea*, but the thorax is even more quadrate than in that species; the elytra have no impressions, and their apex is not so straight as in *D. picea*, the species being in this respect intermediate between *D. picea* and *D. nasuta*.

A single individual has been sent from Otago, by Professor Hutton.

Brachypeplus brevicornis, *n. sp.*

Depressus, sub-oblongus, parallelus, niger, antennis pedibus elytrorumque parte basali rufis, his apice late fuscis, subtus griseo-pubescens, supra nigro-pubescens, sed pubescentia ad basin elytrorum et abdominis grisea.
Long. $3\frac{1}{2}$—$3\frac{3}{4}$ *mm., lat.* $1\frac{1}{3}$ *mm.*

The antennæ are short and rather stout, red in colour, the joints are short, the 2nd and 3rd being each only a little longer than broad, while the following are not so long as broad. The head and thorax are densely and finely punctured; the latter is strongly transverse, nearly straight at the sides, but distinctly narrowed in front, the hind angles rectangular and very definite; the colour at the sides is more dilute. The elytra have the basal part rufescent, the apical blackish, the limit between the two colours is indefinite; their sculpture is fine and indistinct, and con-

sist of series of fine punctures, and punctate interstices. The dense pubescence of the upper surface is blackish, but there is a patch of pale pubescence at the base of the elytra, and two very large patches on the first exposed dorsal segment, there are also a few pale hairs on the margin of the following segment, at the hind angle.

The male has a supplementary dorsal segment.

The species may be located in Murray's sub-gen. *Tasmus*, near the Australian *B. binotatus* and *B. blandus*; though it greatly resembles these species, it is very readily distinguished by the much shorter antennæ.

Sent from Tairua by Captain Broun, as No. 303.

EPURÆA ZEALANDICA, *n. sp.*

Latiuscula, testaceo-ferruginea, supra prothoracis disco elytrisque plus minusve infuscatis; crebrius evidenter punctata; prothoracis elytrorumque lateribus sat explanatis, his apice in utroque sexu rotundato.

Long. 3 *mm., lat.* $1\frac{5}{8}$ *mm.*

This species is intermediate in form between *E. deleta* and *E. limbata*, Er., and is about the size of the latter. The club of the antennæ is elongate. The labrum is elongate, but is deeply divided nearly to its base. The thorax is shaped much as in *E. deleta*, but the sides are more explanate, and the base on each side is more sinuate, the surface is uneven on account of some obsolete impressions.

Sent from Tairua by Captain Broun, as No. 239.

OBS.—This species is evidently variable in colour, it has not only the appearance of our European species of *Epuræa*, but I can detect no structural character whatever to distinguish it. The male is distinguished from the female by the broad front tarsi, and the additional minute apical segment. White's *Nitidula antarctica* is, I have no doubt, another species of *Epuræa*; I have specimens agreeing with his insufficient description; the species has the peculiarity that in the female the apices of the elytra are prolonged and acuminate.

SORONIA OPTATA, *n. sp.*

Oblonga, nigro-fusca, antennis, pedibus, prothoracis elytrorumque limbo rufescentibus, supra tomento obscuro, setisque deorsum curvatis vestita; elytris pone medium fascia undulata colore dilutiore. Long. vix 4 *mm., lat.* $1\frac{7}{8}$ *mm.*

This insect is rather long and narrow in form. The eyes are rather small, but very prominent; the thorax is much emarginate in front, nearly straight, and not undulate at the sides, the hind angles obliquely truncate; its surface is a little uneven, and its sculpture is quite concealed by the obscure tomentum and setæ which it bears. The elytra are clothed in a similar manner, so that their sculpture is also obscure.

The species cannot be confounded with *Soronia hystrix*, on account of its very different outline; it has also the setæ of the upper surface very different, for, instead of being upright and very conspicuous as in that species, they are arched or bent down, so as to escape notice when only a superficial observation is made.

I have seen but one individual; it was from Mr. Bakewell's collection, where it was merely labelled New Zealand.

Brounia thoracica, *n. sp.*

Oblongo-ovalis, nigra, elytris purpureo-nigris, sat dense pubescens, minus nitida, tarsis fusco-testaceis; thorace lateribus et parte anteriore deflexis et dense punctatis, disco inæquali minus punctato, margine basali crenato; elytris crebre sat fortiter punctatis, versus suturam obsolete sulcatis.

Long. $5\frac{1}{2}$ *mm., lat.* 2 *mm.*

Antennæ rather long, the 1st and 2nd joints short and bead-like, 3rd larger and triangular, 4th shorter than 3rd, somewhat produced inwardly, 6th to 11th each produced inwardly into a long slender lobe, 5th joint intermediate in form between the 4th and 6th. Thorax with all the anterior and lateral parts depressed, so that their outer margins are not visible from above, these parts densely and coarsely punctured, the part which remains in the natural plane of the pronotum shining and but little punctured. Scutellum conspicuous, somewhat circular, impunctate; elytra rather long, black, but with a distinct violet or purple tinge, shining, but pubescent, with some ill-defined longitudinal grooves towards the suture, and rather closely, but not coarsely, punctured. Under-surface densely punctured, and very densely and finely pubescent, except on the middle of the metasternum.

Captain Broun has sent me an individual of this species labelled *Drilus ? atrocæruleus;* and informs me he has only been able to find two specimens. It is one of the most remarkable beetles yet discovered in New Zealand, and I give below its structural characters, so far as I can make them out from the very brittle and mutilated example before me. I have, with very great pleasure, named the insect in honour of its discoverer, whose energy and skill are doing so much to enable us to get a satisfactory knowledge of the important insect-fauna of New Zealand.

Anterior parts of the head atrophied, so that the antennæ appear inserted near one another on its front edge, eyes large and conspicuous; antennæ 11-jointed, the basal joints small, those towards the extremity emitting an elongate lobe: beneath, the parts of the mouth seem small but exposed, and the apical joints of the labial and maxillary palpi rather large and subsecuriform. The prothorax is so formed that its anterior open part is placed on the under surface, and the head can be completely doubled in and concealed, all the parts of the head except the prominent trophi when doubled in fit the front opening, and to accomodate the trophi, there is a deep depression in the middle of the prosternum, which extends as far as the coxæ.

The flanks or side-pieces of the thorax are rather largely developed, and their limits and sutures quite distinct; the prosternum is divided as above described, by a very deep fossa or depression in the middle, the piece on each side of this depressed middle part is rather large: the front coxæ are moderately distant from one another, being separated by a depressed prosternal process, the form of the coxæ themselves I cannot see, but their inner terminations are distinctly exserted. The mesosternum is exposed between the middle coxæ, and is emarginate in front, so as to receive the prosternal process and (probably) render the prothorax almost immoveable. The middle coxal cavities are moderately large, irregularly oval, with the slender part outwards, and the embedded coxæ have a small trochantin visible. The metathorax is moderately long, its episterna are large, and almost parallel-sided; the epimera are minute and triangular, and can be seen at the extremities of the coxa and episternum. The hind coxæ are nearly contiguous in the middle, and have a very short but broad upper lamina, which is, however, distinctly broader at its inner portion over the trochanteral articulation; there is a perpendicular lamina to which the femur and tibia can be closely applied when flexed, so as to be concealed. There are five rather large ventral segments, the basal one of which sends off a narrow process between the coxal laminæ. The tarsi are all five-jointed, the 1st and 2nd joints are rather small, the 3rd is very small, but bears a large membranous lobe, extending forwards on the under-face of the foot, the 4th joint is very small, and might, without a careful examination, be supposed to be absent; the 5th joint is, without the claws, as long as the other four together, the claws are large and simple.

This extraordinary insect is one of the most interesting of the *Coleoptera*; it is undoubtedly allied to *Chelonarium*, though at first sight it has more the aspect of an Eucnemid; it departs very widely from *Chelonarium* by the structure of the antennæ, which are similar to those of *Cerophytum elateroides*, except that the basal joint is much smaller. I see no other relationship except to *Chelonarium* and *Cerophytum*, and, in my opinion, it goes far to settle the position of the latter most remarkable insect, for *Cerophytum* is just intermediate between *Brounia* and the *Elateridæ* and *Eucnemidæ*. To force any of these interesting insects into the ordinary families of *Coleoptera*, is to refuse to recognise them for what they really are—isolated anomalies, whose relationships, even *inter se*, are highly problematical.

Pericoptus stupidus, *n. sp.*

Supra nigro-piceus, nitidus, subtus cum pedibus piceo-rufus, et (abdomine excepto) fulvo-hirsutus; prothorace transverso, elytris angustiore, impunctato; elytris obsolete punctatis, et vix perspicue sulcatis; pygidio utrinque parce punctato. *Long.* 18—22 *mm.*, *lat.* 11—12½ *mm.*, *alt.* 8½—9½ *mm.*

Mas, prothorace in medio pone marginem anteriorem obsolete tuberculato, et in medio indeterminate depresso.

Fem., prothoracis tuberculo et depressione ægre distinguendibus.

Head rough over all the upper surface, on the middle indefinitely transversely

elevated, the clypeus much narrowed to the front, and the front edge, in the middle, a little reflexed, and obscurely emarginate: the form of this part does not differ in the sexes.

Several very mutilated individuals of this species were sent from Otago by Prof. Hutton; I should fancy they were picked up dead.

Obs.—There are two very distinct forms placed in collections as *Pericoptus*, and though at first sight they appear very similar, I think they will probably ultimately form distinct genera. In the larger insect, which is generally called in collections *P. truncatus*, the anterior part of the head is flattened, and placed on a different plane to the hinder part, so that the front part forms a sort of disc, which is evidently the same in kind (though less in development) as that of *Temnorhynchus*. In the species I have here described as *P. stupidus*, the head departs but little from the *Pentodon* form. So far as I can judge from White's description of *Cheiroplatys punctatus*, I consider it will prove allied to *P. stupidus*.

Cilibe Huttoni, *n. sp.*

Picea, antennis pedibusque rufis vel piceo-rufis; prothorace nitido, crebrius minus fortiter (disco parcius et subtiliter) punctato, lateribus rotundatis, basin versus angustatis, ad angulos posteriores acutos haud explanatis; elytris subopacis, crebrius irregulariter punctatis, longitudinaliter subsulcatis.

Long. 10—12 *mm.*, *lat.* 5—6 *mm.*

The antennæ are short, and are reddish in colour, with the 3rd and one or two following joints generally more obscure, the 9th and 10th joints are decidedly shorter than broad; the thorax is strongly transverse, with the sides rounded and the base a little sinuate on each side, so that the hind angles are decidedly acute.

The male at first sight seems to exactly resemble the female, but a careful examination shews some constant, though inconspicuous, characters to distinguish it; the front tibiæ along their inner and hinder edge bear a dense very short pubescence; the intermediate tibiæ are clothed in a similar but more conspicuous manner, and are not at all incurved at their extremity.

The species can only be confounded with the variable *C. elongata*, but it is undoubtedly distinct. Mr. F. Bates, to whom we are indebted for the most of our knowledge of the species of this difficult genus, agrees with me on this point, and as he has been kind enough to point out the characters by which it differs *primo visu*, I quote here his remarks in a letter to me. He says: "on first looking at the *Cilibe*, I "judged it to be *elongata* (the form *phosphugoides*, White); on com-

"parison, however, with a numerous series of that species, I find it to "be distinct. Your species has the prothorax relatively broader, dis- "tinctly more rounded at the sides, and contracted at the base, the "punctuation at the sides more open, the elytra not opaque, and with "but very few of the small, shining, black granules which stud the "surface in *elongata*; the two costiform elevations down the middle of "each elytron are in your species obsolete."

This species is probably to be found in numbers in the province of Otago; a series of good specimens sent by Prof. Hutton from there shew but little variation.

I may here remark that I am in hopes that the very difficult species of this genus may be elucidated by examination of the characters distinctive of the sexes; I feel pretty sure that more than one true species is at present called "*elongata*," although the examples before me do not enable me to settle the point.

(To be concluded in our next).

INTRODUCTORY PAPERS ON FOSSIL ENTOMOLOGY.

BY H. GOSS, F.L.S., F.G.S.

No. 2.

[*The comparative age of the existing Orders of Insects, and the sequence in which they appeared on the Geological Horizon.*]

Primary or Palæozoic Period.

Up to the present time no traces of insects have been met with in the most ancient fossiliferous rocks. The oldest organic remains,* belonging to one of the lowest† classes of the animal kingdom, were discovered by Sir Wm. Logan, in 1859, in the Laurentian rocks of Canada.

The Cambrian rocks contain remains of *Hydrozoa*, *Echinodermata*, *Mollusca*, and *Crustacea* of the lower grades. From the Silurian rocks, in addition to remains of animals of the classes before-named, the oldest known Vertebrates have been obtained, consisting of ganoid and placoid fishes.

The earliest traces of insects at present known, were discovered in the upper portion of the next series—the Devonian or old red sandstone. They consisted of a few broken wings of *Neuroptera*, or

* The oldest known fossil has been named by Dr. Dawson *Eozoon canadense*. Sir Charles Lyell observes of it:—"It appears to have grown one layer over another, and to have formed "reefs of limestone, as do the living coral-building polyp animals."

† *Foraminifera*.